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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/877,366	06/08/2001	Sam Kao	M-9925 US	1516

7590

09/22/2003

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EXAMINER

KACKAR, RAM N

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 09/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/877,366

Applicant(s)

KAO, SAM

Examiner

Ram N Kackar

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 13-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 18-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-26 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 13-17, drawn to a method, classified in class 427, subclass 466.
 - II. Claims 1-12 and 18-26, drawn to an apparatus, classified in class 118, subclass 728.
2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus could be used for deposition, etching thermal treatment and the like.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Mr. Michael Shenker on 3/12/03 a provisional election was made with traverse to prosecute the invention of Group II, claims 1-12 and 18-26. Affirmation of this election must be made by applicant in replying to this Office action. Claims 13-17 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Double Patenting

5. Claims 1-2, 4, 6, 8, 10, 12, 18 and 21 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3 of U.S. Patent No.

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6427991. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reason

Claims 1-2, 4, 6, 8, 10, 12 and 21 of the instant application claim an article holder having vortex chucks to hold substrates; vortex chucks requiring tangential flow as well as non-tangential flow directed to the area of low pressure in the vortex.

Claims 1-3 of Patent No. 6427991 disclose plurality of vortices for an article holder and claim a vortex chuck having tangential flow for low pressure and non-tangential flow directed to the area of low pressure in the vortex.

Claims 1-3 do not disclose vortices with variable inlet cross-section area, variable distribution of vortices on the article holder and variable amount of gas in some vortices.

These features control the amount and location of pressure on the substrate and would need to be adjusted for implementing specific applications. Making elements adjustable has been held to be obvious.

Claim 3, 5, 7, 9, 11, 19-20 and 22-23 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3 of U.S. Patent No. 6427991 in view of Oleg Siniaguine (US 6139678).

Claims 1-3 cite a vortex chucks for an article holder having tangential and non tangential flow but do not disclose mounting the article holder to a drive for moving the substrates in to position for processing.

Oleg Siniaguine discloses an article holder with non-contact wafer holders mounted to an angle drive (Col 3 lines 47-50) and discloses all the cited limitations (Fig 1).

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Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to implement the article holder to a drive mechanism like that of Oleg Siniaguine in order to be able to expose substrates to a processing environment.

Claim Rejections - 35 USC § 103

7 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8 Claim 1, 2, 8, 10, 12 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito Kunio et al (JP 57045233).

Ito Kunio discloses a plurality of vortex chucks in an article holder to (Fig 1,2 and 5 and abstract).

Kunio does not disclose vortices with variable inlet cross-section area, variable distribution of vortices on the article holder and variable amount of gas in some vortices.

As discussed above these features control the amount and location of pressure on the substrate and would need to be adjusted for implementing specific applications.

Making elements adjustable has been held to be obvious.

9 Claim 3, 5, 7, 9, 11, 19-20 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito Kunio et al (JP 57045233) in view of Oleg Siniaguine (US 6139678).

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Ito Kunio discloses a plurality of vortex chucks in an article holder to (Fig 1,2 and 5 and abstract) but does not disclose mounting the article holder to a drive for moving the substrates in to position for processing.

Oleg Siniaguine discloses an article holder with non-contact wafer holders mounted to an angle drive (Col 3 lines 47-50) and discloses all the cited limitations (Fig 1).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to implement the article holder to a drive mechanism like that of Oleg Siniaguine in order to be able to expose substrates to a processing environment.

10 Claims 18 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bollinger et al (US 6467297).

Bollinger et al disclose an article holder using vortex chucks to hold substrates (Abstract) and disclose cooling due to the gas coming out of the vortex chamber at ambient temperature of active cooling using temperature control of the vortex gas (Col 3 line 3-4 and lines 43-49). Actual use of the cooling facilities would be in intended use and would be a process limitation, not having any patentable significance.

11 Claim 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bollinger et al (US 6467297) in view of Oleg Siniaguine (US 6139678).

Bollinger et al disclose an article holder using vortex chucks to hold substrates (Abstract) but do not disclose mounting the article holder to a drive for moving the substrates in to position for processing.

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Oleg Siniaguine discloses an article holder with non-contact wafer holders mounted to an angle drive (Col 3 lines 47-50) and discloses all the cited limitations (Fig 1).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to implement the article holder to a drive mechanism like that of Oleg Siniaguine in order to be able to expose substrates to a processing environment.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N Kackar whose telephone number is 703 305 3996. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 703 308 1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9310 for regular communications and 703 872 9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0661.

RK
March 17, 2003


BENJAMIN L. UTECH
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